

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/050324

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H03G3/00 H03G7/00 H03M7/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H03M H03G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 482 927 A (NIPPON ELECTRIC CO) 29 April 1992 (1992-04-29) figure 1	1-12
A	US 6 405 092 B1 (OXFORD WILLIAM VINCENT) 11 June 2002 (2002-06-11) cited in the application figure 3	1-12
A	"STEREO DIGITAL VOLUME CONTROL A CRYSTAL SEMICONDUCTOR APPLICATIONS" ELEKTOR ELECTRONICS, ELEKTOR PUBLISHERS LTD. CANTERBURY, GB, vol. 22, no. 243, 1 April 1996 (1996-04-01), pages 46-47, 49, XP000583422 ISSN: 0268-4519 figure 2	1-12

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

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- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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Date of the actual completion of the international search

28 July 2004

Date of mailing of the international search report

09/08/2004

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 40 36 730 A (THOMSON BRANDT GMBH) 21 May 1992 (1992-05-21) abstract; figure 1 -----	1-12
A	EP 0 887 797 A (THOMSON BRANDT GMBH) 30 December 1998 (1998-12-30) abstract -----	1-12
A	MACSORLEY O L: "HIGH-SPEED ARITHMETIC IN BINARY COMPUTERS" PROCEEDINGS OF THE INSTITUTE OF RADIO ENGINEERS, IEEE INC. NEW YORK, US, vol. 49, no. 1, January 1961 (1961-01), pages 67-91, XP001002205 page 72, left-hand column, line 27 - line 42 -----	12
A	US 4 566 076 A (VAN DER STEEN ANTONIE C A M) 21 January 1986 (1986-01-21) abstract; figure 2 -----	1-12

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/050324

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0482927	A	29-04-1992	JP 2671595 B2	29-10-1997
			JP 4160844 A	04-06-1992
			AU 638362 B2	24-06-1993
			AU 8674791 A	30-04-1992
			CA 2054173 A1	26-04-1992
			DE 69110103 D1	06-07-1995
			DE 69110103 T2	04-01-1996
			EP 0482927 A2	29-04-1992
			US 5533064 A	02-07-1996
US 6405092	B1	11-06-2002	NONE	
DE 4036730	A	21-05-1992	DE 4036730 A1	21-05-1992
EP 0887797	A	30-12-1998	DE 19727133 A1	07-01-1999
			CN 1204124 A ,C	06-01-1999
			EP 0887797 A2	30-12-1998
			JP 11146233 A	28-05-1999
			US 6654471 B1	25-11-2003
US 4566076	A	21-01-1986	NL 8100307 A	16-08-1982
			CA 1184304 A1	19-03-1985
			DE 3200895 A1	12-08-1982
			ES 8305542 A1	01-07-1983
			FR 2498848 A1	30-07-1982
			GB 2091918 A ,B	04-08-1982
			IE 52516 B1	25-11-1987
			IT 1149711 B	10-12-1986
			JP 1768160 C	11-06-1993
			JP 4045859 B	28-07-1992
			JP 57145415 A	08-09-1982